INCREASING URBAN WOOD USE AWARENESS AND PRODUCT DEMAND

AN ANALYSIS OF GREEN MARKET OPPORTUNITIES

December 2018

Kathryn Fernholz

Steve Bratkovich, Ph. D.
Chuck Henderson
Harry Groot
Ed Pepke, Ph. D.

DOVETAIL PARTNERS, INC.

Increasing Urban Wood Use Awareness and Product Demand
An analysis of green market opportunities

Table of Contents

This report provides:

- A review of existing urban forestry and urban forest management accreditation, certification, and credentialing programs to identify areas of alignment and potential for green market opportunities.
- An evaluation of opportunities related to green building programs, third-party forest certification standards, and chain-of-custody (supply chains).
- Information and recommendations to support development of an urban wood certification approach are provided.

Partners on the project include the Arbor Day Foundation, Society of Municipal Arborists, Tree Care Industry Association, Utility Arborists Association, Right-of-Way Stewardship Council, Dovetail Partners, North Carolina Forest Service, Virginia Department of Forestry, and the USDA Forest Service. Support for the project is provided by the North Carolina Forest Service, Urban and Community Forestry Program and the USDA Forest Service.

Executive Summary

This analysis examined existing programs used in the management and care of the urban forest to identify areas of alignment and potential for green market opportunities.[1] The analysis included identifying needs and gaps in addressing urban wood use and opportunities to increase awareness and product demand.

The project that this analysis is a part of includes working with partners to develop an urban wood certification approach that could be adopted and promoted by existing programs (including The Arbor Day Foundation, Society of Municipal Arborists, Right-of-Way Stewardship Council, Utility Arborists Association, Tree Care Industry Association, and Dovetail Partners Inc.), and utilized by municipalities and businesses. The results of this collaboration support state urban wood groups, help create consistent messaging, and will be presented to various audiences and venues.

Several areas of opportunity are available for development of an urban wood certification approach and for the promotion of urban wood use. The opportunities summarized in this report include green markets related to:

- green building programs
- third-party forest certification programs
- third-party forest certification chain-of-custody programs
- mutual recognition and program partnerships
- regional activities

There are regionally specific activities that may provide opportunities for expanded urban wood use. In the Midwest, the Urban Wood Network includes participants from Illinois, Michigan, Missouri and Wisconsin working to support urban wood utilization. In the West, an urban lumber network has formed under the name Urban, Salvaged and Reclaimed Woods, Inc. (USRW) and has members in California, Montana, Oregon, British Columbia, Hawaii, Arizona, New Mexico, and Texas. An example of a well-developed program for urban wood sourced through deconstruction and reclaimed building materials operates in Baltimore, Maryland.

Urban wood use is reported anecdotally within green building programs and third-party forest certification programs. Further research could quantify activities in these areas to highlight additional opportunities. With further development, the use of urban wood in green building could be expanded and recognition within third-party forest certification programs could be formalized. The Programme for the Endorsement of Forest Certification (PEFC) has announced an expanded scope of their program to include street trees and urban forests. The guidelines for their process offer a clear customizable pathway to internationally recognized, third-party certification for urban forest management and urban forest products.

[1] The programs included in the review are listed briefly in Table 1 with additional detail about each program provided in Appendix A.

Introduction

This analysis examined existing programs used in the management and care of the urban forest[2] to identify areas of alignment and potential for green market opportunities. The analysis identified needs and gaps in addressing urban wood use and opportunities to increase awareness and product demand. The following list of programs and standards (Table 1 and Appendix A) were included in the review to support development of a certification approach for urban wood use and products in relation to responsible urban forest management practices.

Table 1. Urban Forestry Programs and Standards included in the Review

Name	Administrator
Tree City USA *(Tree City USA Growth Award also included within review)*	Arbor Day Foundation
Tree Campus USA	
Tree Line USA	
Urban Forest Sustainability & Management Review	Urban Forestry South - Centers for Urban and Interface Forestry, USDA Forest Service, Forestry Sciences Laboratory
Society of Municipal Arborists Accredited Urban & Community Forestry Program	Society of Municipal Arborists (SMA)
ISA Certified Arborist	International Society of Arboriculture (ISA)
ISA Certified Arborist Utility Specialist	
ISA Certified Municipal Specialist	
ISA Certified Tree Worker Climber Specialist	
ISA Certified Tree Worker Aerial Lift Specialist	
ISA Board Certified Master Arborist	
TCIA Accreditation	Tree Care Industry Association (TCIA)
TCIA Accredited Utility Contractor	
Certified Treecare Safety Professional (CTSP)	
Qualified Crew Leader Certificate	
Tree Care Academy	
ROW Stewardship Technical Requirements, Accreditation Standards for Assessing IVM Excellence (3/1/16)	Right-of-Way Stewardship Council (ROWSC) (administered by Dovetail Partners)
ANSI Z133.1 Safety Standards	Developed for the arboriculture industry under the procedures of the American National Standards Institute (ANSI)
ANSI A300 Tree Care Performance Standards	Developed by TCIA and written by the Accredited Standards Committee (ASC) A300
ASCA Registered Consulting Arborist	American Society of Consulting Arborists (ASCA)

[2] Urban forests in the US are associated with urban areas as defined by the Bureau of the Census. For an introduction to urban wood utilization definitions, facts, and figures, see the Dovetail Report "Urban Tree Utilization and Why It Matters", available at: http://www.dovetailinc.org/report_pdfs/2008/dovetailurban0108ig.pdf

The analysis also included international third-party certification programs that apply to natural and plantation forestry:

- Forest Stewardship Council (FSC)
- Programme for the Endorsement of Forest Certification (PEFC)[3]

Additional programs, including the US Green Building Council (USGBC) LEED[4] green building program, SITES Accredited Professional standards from Green Business Certification, Inc.[5], SCS Global Services Salvaged Wood & Fiber Verification[6], Urban Salvaged & Reclaimed Woods Inc. (USRW)[7], and TreeCycle America[8] were also relevant to this analysis.

Evaluation Approach

To evaluate existing urban forestry and urban forest management accreditation, certification, and credentialing programs and standards a comparison was done with various criteria that have been established for making market-based claims for wood products. These approaches include existing systems used in green building programs, forest certification, and chain-of-custody labeling programs.

Green Building Program Comparisons

For the sourcing of wood for green building projects, the evaluation included the ASTM[9] Standard D7612-10 and the "locally-sourced" product definitions for the USGBC LEED green building program and the National Association of Home Builders' (NAHB) National Green Building Standard.

Comparison with ASTM Definitions for Legal, Responsible, and Certified Wood

In April 2016 the US Green Building Council (USGBC) announced a new approach to evaluating wood products used in construction projects that are seeking LEED certification. The approach now offered by the USGBC utilizes an ASTM standard that establishes "Standard Practice for Categorizing Wood and Wood-Based Products According to Their Fiber Sources".[10] This standard provides a consistent structure for defining and identifying "legal", "responsible" and "certified" categories of forest products. The standard has been applied to the existing major forest certification programs and can be used to evaluate new or proposed programs, including the variety of existing urban wood programs and standards.

[3] The Sustainable Forestry Initiative (SFI) and the American Tree Farm System (ATFS) are regional certification programs that are endorsed by the PEFC.
[4] LEED is Leadership in Energy and Environmental Design and is the green building program of the USGBC. For more information: https://www.usgbc.org/LEED/
[5] http://www.sustainablesites.org/sites-ap
[6] https://www.scsglobalservices.com/salvaged-wood-verification
[7] https://urbansalvagedwoods.com/
[8] https://treecycleamerica.com/
[9] ASTM International, formerly known as American Society for Testing and Materials, is an international standards organization that develops and publishes voluntary consensus technical standards for a wide range of materials, products, systems, and services. https://www.astm.org/
[10] ASTM Standard D7612-10, available at : https://www.astm.org/Standards/D7612.htm

ASTM Standard D7612-10 Category Criteria

The ASTM Standard D7612-10 defines three categories of forest products with the following criteria:

Legal: *Fiber is from jurisdictions with a low risk of illegal activity or from controlled wood standards, stair-step standards, legality assessments, or other proprietary standards; the fiber procurement system governance is public legislative or regulatory processes or proprietary standards; documentation includes traceability to the applicable jurisdiction.*

Responsible: *Fiber is from jurisdictions with a low risk of illegal activity or from controlled wood standards, stair-step standards, legality assessments, or other proprietary standards; the fiber procurement system governance is public legislative or regulatory processes or proprietary standards or consensus based; content requires compliance with BMPs to protect water quality and ensures all fiber comes from known and legal sources or provides for forest management plans in substantial compliance with relevant portions of Guide D7480-08 or equivalent; documentation includes traceability to the applicable jurisdiction or by a certified procurement system or by a chain or custody system.*

Certified: *Fiber is from jurisdictions with a low risk of illegal activity or from controlled wood standards, stair-step standards, legality assessments, or other proprietary standards; content provides for Forest Management Plans in substantial compliance with relevant portions of Guide D7480-08 or equivalent; the fiber procurement system governance is consensus based; documentation includes traceability by a chain or custody system.*

Findings

Based upon these criteria and the additional information in the ASTM standard, it appears that a number of the existing urban programs and standards could seek to qualify as a source of "legal" forest products because the area where materials come from from has low risk of illegality,[11] there are procurement systems in place, and products may be traced to the jurisdiction where they are harvested.

Furthermore, it appears that some existing urban programs could be enhanced to more clearly meet the criteria for "responsible sources". To meet these criteria, the standards for the program need to include requirements that address one of the following (A or B):

A. Compliance with best management practices to protect water quality and ensures all fiber comes from known and legal sources

   Or:

B. Provides for Forest Management Plans in substantial compliance with relevant portions of Guide D7480-08[12] or equivalent.[13]

[11] For discussion of legality risks, see: http://beta.nepcon.org/sourcinghub/timber

[12] ASTM D7480 – 08 Standard Guide for Evaluating the Attributes of a Forest Management Plan https://www.astm.org/DATABASE.CART/HISTORICAL/D7480-08.htm

[13] For examples of urban forest management planning, see https://ufmptoolkit.net/

Lastly, one or more urban programs could be modified to meet the criteria for "certified" sources under the ASTM standard. The considerations that would need to be addressed include the requirement to develop a consensus-based standard; having to meet the forest management plan compliance (see "B" above), and traceability by a chain of custody system. In addition, ASTM D7612-10 includes the statement that "Products from certified sources are produced with… an internationally recognized voluntary forest certification standard or equivalent." The ASTM standard goes on to say that equivalent standards need to be verified by an accredited independent third party.

The following table summarizes the existing urban wood programs and standards that have the strongest potential alignment with the legal, responsible, and certified criteria within the ASTM standard (Table 2).

Table 2. Existing urban programs that potentially align with the *ASTM Standard D7612-10 Standard Practice for Categorizing Wood and Wood-Based Products According to Their Fiber Sources*

Name	Administrator	Likely meets ASTM "legal criteria	Potentially meets ASTM "responsible" criteria	Positioned to obtain ASTM "certified" criteria
Tree City USA *(Tree City USA Growth Awards also included within review)*	Arbor Day Foundation	Yes	Yes, Growth Awards Category C addressing Planning and Management	Yes
Tree Campus USA	Arbor Day Foundation	Yes	Yes, Standard 2 requires a Campus Tree Care Plan	Yes
Urban Forest Sustainability & Management Review	Urban Forestry South - Centers for Urban and Interface Forestry, USDA FS	Yes	Yes, Category 6 addresses Urban Forest Management Plans; standard also addresses stormwater BMPs	Yes
Society of Municipal Arborists Accredited Urban & Community Forestry Program	Society of Municipal Arborists	Yes	Yes, requires a Local Forest Master Plan	Yes
ROW Stewardship Technical Requirements, Accreditation Standards for Assessing IVM Excellence (3/1/16)	Right-of-Way Stewardship Council/Dovetail Partners	Yes	Yes, addresses legal compliance and BMPs (Principle 1 and Indicator 8.2f specific to water resources) and Management Planning (Principle 4)	Yes
USRW National Standard	Urban Salvaged & Reclaimed Woods Inc. (USRW)	Yes	Yes, addresses BMPs and management plans	Yes

Example Language to Strengthen Alignment with the ASTM Standard

To further enhance the alignment between existing urban standards and the ASTM definitions additional language could be inserted into the requirements of each program or other changes could be made.

To ensure that an existing program is able to provide materials that meet the definition of "legal" the following conditions should be considered:

- The US is a low risk jurisdiction for illegal logging activity[14]
- Municipal governments and other responsible parties for urban forest management are accountable to public legislative and regulatory processes
- Urban trees that are removed are commonly traceable to the jurisdiction (e.g., municipality) via inventory information and records of tree care contractors and service providers

Examples of language to further address "legal" within program requirements:

- "Entities recognized through this program shall source urban wood from within the US or other jurisdictions that have been evaluated and found to be a low risk of illegal activity."
- "Entities recognized through this program shall source urban wood in compliance with applicable regulatory process, standards and laws."
- "Entities recognized through this program shall maintain documentation that includes traceability of the urban wood to the jurisdiction of origin."

To address the definition of "responsible" the following *additional* conditions should be considered:

- Best Management Practices (BMPs) for urban forest management and to protect water quality have been established in many jurisdictions[15]
- Urban Forest Management Plans have been developed for many jurisdictions that adhere to relevant standards[16]
- Tree care companies and other entities engaged in urban wood removals commonly maintain detailed procurement systems (e.g., written contracts, permitting records, licensing, load receipts)

Examples of language to further address "responsible" within program requirements:

- "Entities recognized through this program are required to comply with BMPs to protect water quality."
- "Entities recognized through this program shall ensure that all fiber comes from known and legal sources or is provided for in a comprehensive forest management plan."

[14] https://www.nepcon.org/sites/default/files/library/2018-12/NEPCon-TIMBER-USA-Risk-Assessment-EN-V1.2.docx.pdf
[15] For example, in Minnesota: https://www.dnr.state.mn.us/forestry/urban/bmps.html
[16] For examples, see: Urban Forest Management Plan Toolkit, https://ufmptoolkit.net/ and https://ufmptoolkit.net/resources/example-plans/#large-area

- "Entities recognized through this program shall maintain documentation that includes traceability to the jurisdiction of origin or by a certified procurement system or by a chain of custody system."

To address the definition of "certified" the following *additional* conditions should be considered:
- Some urban programs have been developed using a consensus-based process (e.g., working group, public review, stakeholder consultation)
- Some urban programs have an international component[17]
- Some urban programs have an established reporting, testing and/or auditing component

Examples of language to further address "certified" within program requirements:

- "Entities recognized through this program shall ensure that sourced materials are addressed in a comprehensive forest management plan."
- "Entities recognized through this program shall utilize a procurement system of governance that is consensus based with documentation that includes traceability by a chain of custody system."
- "The standards for this program shall be internationally recognized and verified by an accredited independent third-party."

To advance alignment with the *ASTM Standard D7612-10* and the opportunities for greater recognition of urban wood within green building programs, it may also be necessary to engage directly with USGBC to determine the process for having urban wood recognized as legal, responsible, and/or certified material in the LEED system. The recognition process may include a requirement for an independent assessment, consultation with USGBC members or working groups, issuance of an updated interpretation of the LEED credit, and/or other steps and actions.[18] Engagement with local USGBC chapters may be a starting point in these conversations.

[17] The International Society of Arboriculture (ISA) operates globally, and The Arbor Day Foundation has announced a partnership with the Food and Agriculture Organization of the United Nations (FAO) on the Tree Cities of the World Programme https://www.wfuf2018.com/public/file/CS-MantovaChallengeENG_WFUF2018.pdf

[18] The State of Oregon used an external third-party auditing firm to review state forestry laws and practices to establish a certificate that producers of Oregon timber can use to demonstrate compliance to ASTM D7612. https://www.oregon.gov/ODF/Working/Pages/ResponsibleSource.aspx

Green Building Locally-Sourced Definitions

Green building programs commonly include criteria to identify materials that are "locally-sourced." There are several approaches to this and urban wood may qualify in some instances.

USGBC LEED

The USGBC LEED green building program includes requirements for "regional materials." Included in Appendix B is an example of requirements for regional materials from one of the LEED programs. The general USGBC requirement is that the material is "extracted, harvested or recovered, as well as manufactured…within 500 mile…of the project site". Many urban wood products can fit this definition and be used to obtain credits in green building projects. It is reported anecdotally that urban sources of wood are already being included in diverse green building projects and additional research may identify examples that could be used as case studies and help quantity additional opportunities. To meet the regional materials requirements in LEED suppliers of urban wood products must be prepared to document the location(s) where the wood was sourced and where any manufacturing occurred in relation to the final project site.

NAHB NGBS

The National Association of Home Builders of the United States (NAHB) released the current National Green Building Standard (ICC/ASHRAE 700-2015 National Green Building Standard™) in 2016. The current standard was approved by ANSI as an American National Standard on March 22, 2016.

The NGBS includes requirements for Regional Materials (11.609). The requirements and the definition for a regional material are detailed in Appendix B. The NGBS uses a standard threshold of 500 miles for defining a regional material when the material is transported by truck. A distance of 1,500 miles is applied if the material is primarily transported by rail or water. The NGBS also has a section addressing renewable materials, which has requirements for biobased products, including wood-based products (See Appendix B). The requirements include the use of certified wood-based products. The NGBS currently references the existing third-party certification programs (ATFS, CSA, FSC, PEFC, and SFI). It also references the program developed by the National Wood Flooring Association. To have urban wood credited within this section, it would need to be included in a labeled third-party certified product from one of the recognized programs (see following sections for further discussion).

Comparison with Third-Party Forest Certification Programs

There are several existing third-party forest certification programs that have established standards for recognizing responsible forest management. These programs operate both internationally and regionally. The leading global programs are the Forest Stewardship Council (FSC), with headquarters in Bonn, Germany, and the Programme for the Endorsement of Forest Certification (PEFC), with headquarters in Geneva, Switzerland. In the US, the largest program is the Sustainable Forestry Initiative (SFI). The American Tree Farm System (ATFS) also operates in the US to certify family forest operations. The SFI and ATFS programs operate regionally and have received internationally-endorsement through the PEFC.

Forest Stewardship Council

The Forest Stewardship Council (FSC) is an internationally-recognized, third-party forest certification program. The FSC standards for certification of forest management encompass 10 principles of responsible management (Box 1).

Box 1. Forest Stewardship Council Principles

Principle 1: Compliance with Laws and FSC Principles
Principle 2: Tenure and Use Rights and Responsibilities
Principle 3: Indigenous Peoples' Rights
Principle 4: Community Relations and Worker's Rights
Principle 5: Benefits from the Forest
Principle 6: Environmental Impact
Principle 7: Management Plan
Principle 8: Monitoring and Assessment
Principle 9: Maintenance of High Conservation Value Forests
Principle 10: Plantations

Sustainable Forestry Initiative

The Sustainable Forestry Initiative (SFI) is an internationally-recognized, third-party forest certification program. The SFI standard for forest management includes 15 Objectives that apply to lands directly owned and managed by the organization applying for certification (Box 2).

Box 2. SFI Forest Management Objectives

Objective 1. Forest Management Planning
Objective 2. Forest Health and Productivity
Objective 3. Protection and Maintenance of Water Resources
Objective 4. Conservation of Biological Diversity
Objective 5. Management of Visual Quality and Recreational Benefits
Objective 6. Protection of Special Sites
Objective 7. Efficient Use of Fiber Resources
Objective 8. Recognize and Respect Indigenous Peoples' Rights
Objective 9. Legal and Regulatory Compliance
Objective 10. Forestry Research, Science and Technology
Objective 11. Training and Education
Objective 12. Community Involvement and Landowner Outreach
Objective 13. Public Land Management Responsibilities
Objective 14. Communications and Public Reporting
Objective 15. Management Review and Continual Improvement

The SFI standard also offers 13 Objectives that address Fiber Sourcing and apply to lands that are not directly owned by the organization that is applying for certification but from which the organization sources materials (Box 3).

Box 3. SFI Fiber Sourcing Objectives

Objective1.Biodiversity in Fiber Sourcing Objective 2.Adherence to Best Management Practices Objective 3. Use of Qualified Resource and Qualified Logging Professionals Objective 4. Legal and Regulatory Compliance Objective 5. Forestry Research, Science and Technology Objective 6. Training and Education Objective 7. Community Involvement and Landowner Outreach Objective 8. Public Land Management Responsibilities Objective 9. Communications and Public Reporting Objective 10. Management Review and Continual Improvement Objective 11. Promote Conservation of Biological Diversity, Biodiversity Hotspots and High-Biodiversity Wilderness Areas Objective 12. Avoidance of Controversial Sources including Illegal Logging Objective 13. Avoidance of Controversial Sources including Fiber Sourced from Areas without Effective Social Laws

Given the scope of the FSC and SFI principles for forest management certification it would be difficult for an urban forestry operation to fully address the FSC or SFI forest management standards. Past work completed with the City of Raleigh, North Carolina examined the alignment between urban forest management and the FSC and SFI standards.[19] While there are many similarities and parallels between these third-party forest certification standards and responsible urban forest management there is more work needed to support full alignment and inclusion. A starting point may be to see if wood sourced from urban areas may be addressed and included within the SFI Fiber Sourcing Objectives (Box 3) since that part of the SFI standard is intended to apply to diverse sources of materials used in forest product manufacturing.

Programme for the Endorsement of Forest Certification

The Programme for the Endorsement of Forest Certification (PEFC) is an international program that evaluates regional or national programs to determine conformance to the established PEFC Benchmark for forest certification standards. Programs that meet the PEFC Benchmark achieve PEFC Endorsement, which is recognized internationally.

The requirements for programs seeking PEFC endorsement include a number of considerations for responsible forest management, including leadership, planning, legal compliance, operations, performance evaluation and improvement. Within the category of operations, the PEFC has six criteria for endorsed forest certification standards (Box 4).

[19] See report, *Raleigh, North Carolina: An Assessment of Municipal Tree Utilization and the Urban Forestry Program*, Dovetail Partners, July 2015.
http://www.dovetailinc.org/report_pdfs/2016/dovetailraleighfinalreport2015july.pdf

Box 4. PEFC Criteria within the Category of Operations

Criterion 1. Maintenance or appropriate enhancement of forest resources and their contribution to the global carbon cycle Criterion 2. Maintenance of forest ecosystem health and vitality Criterion 3. Maintenance and encouragement of productive functions of forests (wood and non-wood) Criterion 4. Maintenance, conservation, and appropriate enhancement of biological diversity in forest ecosystems Criterion 5. Maintenance or appropriate enhancement of protective functions in forest management (notably soil and water) Criterion 6. Maintenance or appropriate enhancement of socio-economic functions and conditions

PEFC Trees Outside Forests

In 2018, the PEFC announced an approved expansion of their certification program to include "Trees outside Forests (TOF)", which includes trees associated with farms and agricultural settings as well as street trees and urban forests.[20] The PEFC sees opportunities to support rural development and agroforestry practices as well as the potential to improve the sustainability of urban forests in cities.[21]

The PEFC proposal to include trees outside forests was released for public comment in April 2018. The proposal for "Guidelines for the interpretation of requirements for Trees outside Forests (TOF)" is Appendix 2 of the PEFC International Standard and was subsequently approved in November 2018.[22]

The approved guidelines provide a crosswalk between existing PEFC standards and how they would be applied in a TOF situation, including the identification of requirements that would not be applicable. Now that they are finalized, the guidelines offer a pathway to establishing an urban forest certification standard that could achieve international recognition through the PEFC endorsement process.

Currently, SFI and ATFS are the organizations from the US that have membership in the PEFC and may be in the best position to facilitate a standards development process to align with an application for PEFC endorsement of an urban forest management standard for the US. Other organizations, including Urban, Salvaged and Reclaimed Woods, Inc. (USRW) have standards development activities underway that could align with international recognition.[23]

[20] PEFC defines Trees Outsides Forests as: *Trees growing outside areas of nationally designated forest land. Such areas will normally be classified as "agriculture" or "settlement*".
[21] https://pefc.org/projects/knowledge/trees-outside-forests
[22] https://consultations.pefc.org/gf2.ti/f/924290/36493605.1/PDF/-/PEFC_ST_1003201X_SFM_ED.pdf
[23] See section addressing "Regional Activities" for more information

Inclusion in Third-Party Forest Certification Chain-of-Custody Programs

In addition to providing standards for forest management, the existing third-party forest certification programs provide on-product eco-labels for forest products from companies that follow established chain-of-custody sourcing requirements. These requirements address the use of certified material as well as non-certified material. Materials that are not certified but are shown to meet basic guidelines can be identified as "controlled wood" in the FSC system or "noncontroversial sources" in the PEFC system and can be included in products that carry the certification label.[24] There may be opportunities to increase the market demand for urban wood as controlled or non-controversial sources of materials that could be included in a company's chain-of-custody system.

FSC Chain-of-Custody, Controlled Wood

The FSC Controlled Wood Standard is intended to minimize the risk of using wood products from 'unacceptable' sources in FSC-labeled products. The following criteria for wood and wood products are considered unacceptable and are avoided in FSC-labeled products through Controlled Wood sourcing (Box 5).

Box 5. FSC Controlled Wood Risk Categories

1. Illegally harvested wood
2. Wood harvested in violation of traditional and civil rights
3. Wood harvested in forests where High Conservation Values are threatened by management activities
4. Wood harvested from natural forests that were converted to non-forest uses
5. Wood from genetically modified trees.

The scope of the FSC Controlled Wood standard is narrow and could align with sourcing from urban forests. Urban wood that is found to meet the controlled wood standard (i.e., low risk for the five categories) could be included in FSC-labeled products.

The FSC chain of custody standard includes a definition of "salvaged wood" that includes several types of wood sources, including: "Wood that was: Naturally felled (e.g. by storm or snow,…[and/or]…felled for purposes other than wood production (e.g. wood from orchard clearance, wood from road clearance, and urban harvested wood)..."[25] The standard goes on to clarify that "…salvaged wood is considered as virgin material and shall be assessed as controlled material or sold as FSC Controlled Wood."[26, 27]

[24] "FSC Mix" is an example of a label for products that include certified and controlled wood sources
[25] FSC STD 40-004 V3-0 available at: https://ic.fsc.org/file-download.chain-of-custody-certification.a-439.pdf
[26] The FSC standard distinguishes between "salvaged wood" and "reclaimed material." Urban wood from trees is considered salvaged wood in the FSC standard; while urban wood resulting from deconstruction activities would be considered reclaimed material in the FSC standard. See further discussion of deconstruction later in this report.
[27] Materials defined by FSC as "reclaimed" include post-consumer products, construction debris, and deconstructed building materials, which may be included in FSC Recycled labeled products.

To advance the inclusion of urban wood in FSC supply chains it may be possible to conduct or commission risk assessment(s) of identified urban wood sources to determine risk levels and any necessary mitigation. The logistics of this may be complicated by FSC's recent transition to National Risk Assessments and the need to clarify if the national risk assessment that has been completed for the US was written to include urban wood or other sources of salvaged wood.[28]

Existing urban programs that wish to better align with the FSC controlled wood standard could add language to their programs to include requirements that address the five categories of risk (Box 5). For example, language could be added to require: "Entities recognized by this program must ensure and retain documentation to verify that materials are not from sources that include any of the following: illegally harvested wood, violations of traditional and civil rights, threats to high conservation values, natural forests converted to non-forest uses, and genetically modified trees."

The category that is likely to create the greatest possibility for conflict between the FSC requirements and urban wood is related to the fourth requirement to exclude "wood harvested from natural forests that were converted to non-forest uses". This requirement may be interpreted as excluding wood derived from land clearing activities. Companies sourcing from urban areas would need to implement due diligence or risk mitigation measures to ensure wood coming from land clearing and development activities is excluded from any material that is to be identified as controlled wood or included in an FSC supply chain. It is possible that urban sources of wood are already being included in FSC products as controlled material and additional research may identify examples that could be used as case studies or to quantify opportunities.

SCS Salvaged Wood and Fiber

The independent third-party auditing firm, SCS Global Services, based in Emeryville, California offers a "Salvaged Wood & Fiber Verification" program and includes urban wood as an eligible material.[29] In the standard, urban wood is defined as "Wood legally sourced from trees and other woody plants contained within the boundaries of a municipality or equivalent jurisdiction, including trees along streets, parks and greenspaces, abandoned infrastructure, the property of private citizens, and other areas where natural forest ecosystem processes have been interrupted due to medium - or long -term human intervention."

The SCS program is distinct from the FSC program (although SCS does provide FSC auditing services). The SCS Salvaged Wood & Fiber Standard verifies wood and fiber sources that are not certifiable under the FSC system.[30]

The SCS standard is primarily a chain-of-custody system that urban wood producers can use to demonstrate that their materials can be classified as "urban wood" under the standard's

[27] For an example of a risk assessment strategy to reduce market barriers, in 2008 the American Hardwood Export Council completed a risk assessment that covered commercial production of US hardwoods, see: https://c.ymcdn.com/sites/www.ohioforest.org/resource/resmgr/verified_sustainable/ahec_risk_assessment_summary.pdf

[28] For more information, see: https://us.fsc.org/en-us/certification/controlled-wood/fsc-us-controlled-wood-national-risk-assessment-us-nra

[29] For more information, see: https://www.scsglobalservices.com/salvaged-wood-verification

[30] As discussed previously, urban wood from urban trees may be eligible as a "controlled material" in the FSC system, but FSC currently only allows FSC certification for materials from responsibly managed natural forests, plantations, or recycled/reclaimed sources.

definition, are legally sourced, and that they maintain records to demonstrate conformance with the standard. Entities approved through the program are able to utilize a SCS Global Services label for identifying salvaged wood and fiber in marketing and on-product claims.

SFI Fiber Sourcing

As discussed previously, there may be opportunities to recognize urban wood sources through the SFI Fiber Sourcing standard that addresses materials from lands that are not directly owned by the certified product manufacturer. It is possible that urban sources of wood are already being included in SFI products and additional research may identify examples that could be used as case studies or to quantify opportunities.

Companies that are certified to the SFI Fiber Sourcing standard (Box 3) are responsible for demonstrating compliance with the standard through the actions they take in their supply chain. Urban forest managers or urban wood suppliers that are interested in participating in the SFI market opportunity could seek information (i.e., via the SFI website) about existing certified SFI Fiber Sourcing operations in their regions to evaluate opportunities to be a supplier.

PEFC Chain-of-Custody, Due Diligence and Controversial Sources

The PEFC provides a chain-of-custody approach that includes due diligence systems for meeting legal sourcing requirements and for excluding controversial sources. Similar to the FSC controlled wood and SFI fiber sourcing requirements, it is possible that urban wood could be included in a PEFC labeled product.

Mutual Recognition and Program Partnerships

There are a number of existing certification, recognition, and accreditation programs that apply to various aspects of urban forest management and urban wood. A key distinction between the programs is that some are place-based and geographically referenced and others are associated with the qualifications of specific individuals or companies. Some programs already include cross-references to other programs. In recent years, the Tree Care Industry Association (TCIA) co-led the development of a draft A300 (Part 11) standard practice addressing Urban Forest Products, including evaluation, removal and recovery. The development of this standard was discontinued in 2016.[31] To support greater adoption and understanding of existing programs, there may be opportunities to increase the alignment, mutual recognition, and program partnerships and revisit or complete the development of A300 Part 11.

Regional Activities

There are some regional activities that may provide opportunities for urban wood certification. In the Midwest, the Urban Wood Network[32] includes participants from Illinois, Michigan, Missouri and Wisconsin working to support urban wood utilization. In the West, an urban lumber network has formed under the name Urban, Salvaged and Reclaimed Woods, Inc.

[31] For more information, see: http://illinoisurbanwood.org/tcia-releases-statement-on-a300-part-11-urban-forest-products-status/

[32] http://urbanwoodnetwork.org

(USRW)[33] and has members in California, Montana, Oregon, British Columbia, Hawaii, Arizona, New Mexico, and Texas. These networks are interested in identifying urban wood products in the marketplace, and USRW is nearing completion of a certification and chain-of-custody standard. The USRW standard is intended to align with FSC, SFI, PEFC, and LEED requirements, including geographic tracking of urban salvaged and reclaimed woods and record keeping related to tree management and removal practices.

Urban Wood Sourced Through Deconstruction and Reclaimed Building Materials

In addition to urban wood that is sourced from the removal of urban trees, there is also urban wood that is sourced from deconstruction activities and reclaimed building materials. These sources of urban wood are already commonly recognized within green markets, including green building programs and third-party certification systems. The USGBC program recognizes reclaimed and recycled building materials, including wood products.[34] The FSC standard also recognizes recycled and reclaimed materials. An example of a well-developed urban wood initiative that is predominantly based upon deconstruction and reclaimed building materials is The Baltimore Wood project in Baltimore, Maryland.[35] Wood from these efforts is featured in a line of furniture from Room & Board.[36]

Recommendations

To pursue the identified green market opportunities, there are several actions that could be taken by individual entities and/or through collaboration. Areas of potential activity include:

Within green building:

- Engage with USGBC and other green building programs to determine process for being recognized in accordance with *ASTM Standard D7612-10*
- Review and revise existing urban programs to align with *ASTM Standard D7612-10 Category Criteria*
- Research and report on existing use of urban wood in green building projects to support replication and to quantify the market opportunities

Within forest certification:

- Seek clarification from FSC around the process of completing an FSC compliant risk assessment process for urban wood as a controlled material (i.e., addressing salvaged wood within the FSC system)
- Explore opportunities within the new PEFC Trees Outside Forests guidelines (e.g., through working group formation)

[33] https://urbansalvagedwoods.com
[34] For example, LEED MR Credit 3, Materials Reuse, awards points to projects for using salvaged materials. One point is awarded if 5% of the building materials are salvaged (based on cost), and two points are awarded if 10% are salvaged. For more information, see: https://www.poplarnetwork.com/topics/reused-recycled-materials-leed
[35] http://baltimorewoodproject.org/
[36] https://www.roomandboard.com/catalog/living/urban-wood-project-baltimore

- Research existing use of urban wood in FSC, SFI and/or PEFC labeled products to support replication and to quantify the market opportunities

Between existing programs, regional activities, and deconstruction opportunities:

- Evaluate possibilities for providing additional recognition across programs (e.g., joint meetings or coordination in standards review processes)
- Identify opportunities for expanded awareness and greater participation in regional networks
- Evaluate opportunities to align/collaborate between the two major sources of urban wood, namely from deconstruction and from tree removals

The Bottom Line

This analysis examined existing programs that are utilized in the management and care of the urban forest to identify areas of alignment and potential for green market opportunities. The analysis identified a number of near and long-term opportunities related to green building, forest certification programs, existing programs, and regional activities. Urban wood use is reported anecdotally within green building programs and third-party forest certification programs; however, further research could quantify activities in these areas. With further development, the use of urban wood in green building could be expanded and recognition within third-party forest certification programs could be formalized. The PEFC has announced an expanded scope of their program to include street trees and urban forests (Trees Outside Forests), which offers a clear customizable pathway to internationally recognized, third-party certification for urban forest management and urban forest products.

Appendix A. Urban Forestry Programs and Standards included in the Review

The following list of programs and standards were included in the review to support development of a certification approach for urban wood use and products in relation to responsible urban forest management practices.

Name	Administrator	Eligibility	Website
Tree City USA *(Tree City USA Growth Award also included within review)*	Arbor Day Foundation	Communities that qualify for Tree City USA awards are incorporated municipalities (cities, towns, villages, boroughs) and military bases. Other units of local government (townships or combined city-county governments) with the power to pass local ordinances may also qualify.	https://www.arborday.org/programs/treecityusa/standards.cfm
Tree Campus USA	Arbor Day Foundation	Tree Campus USA is open to 2- to 4-year accredited colleges and universities.	https://www.arborday.org/programs/treecampususa/standards.cfm
Tree Line USA	Arbor Day Foundation	The TreeLine USA® program exists to recognize best practices in public and private utility arboriculture.	https://www.arborday.org/programs/treeLineUSA/summary.cfm
Urban Forest Sustainability & Management Review	Urban Forestry South - Centers for Urban and Interface Forestry, USDA Forest Service, Forestry Sciences Laboratory	Campus or municipal urban forestry programs	https://urbanforestrysouth.org/
Society of Municipal Arborists Accredited Urban & Community Forestry Program	Society of Municipal Arborists	Recognizes urban and community forestry programs (at municipal or county level or equivalent) for implementing excellent and comprehensive management practices; structured to build on Tree City USA and applies internationally.	http://www.urban-forestry.com/sma-accreditation
ISA Certified Arborist	International Society of Arboriculture	To be eligible: three or more years of full-time, eligible, practical work experience in arboriculture and/or a degree in the field of arboriculture, horticulture, landscape architecture, or forestry from a regionally accredited educational institute.	http://www.isa-arbor.com/certification/resources/cert_Application_CertifiedArborist.pdf

ISA Certified Arborist Utility Specialist	International Society of Arboriculture	Minimum of 2000 hours experience over two years in electric utility vegetation management or has served as a consultant to a utility, with a minimum of 4,000 hours over a maximum 10-year period. The candidate must work in utility vegetation management.	http://www.isa-arbor.com/certification/resources/cert_Application_Utility.pdf
ISA Certified Municipal Specialist	International Society of Arboriculture	Current ISA Certified Arborists® who have chosen municipal arboriculture or urban forestry as a career path. They have obtained a minimum of three additional years of work experience managing the establishment and maintenance of urban trees.	http://www.isa-arbor.com/certification/resources/cert_Application_Municipal.pdf
ISA Certified Tree Worker Climber Specialist	International Society of Arboriculture	Candidates must have the skill and endurance to climb trees, demonstrate high regard for safety, and be able to get the job done off the ground; tested in both a classroom setting and a field setting. Candidates must have training in aerial rescue, CPR, and First Aid.	http://www.isa-arbor.com/certification/resources/cert_Application_ClimberSpecialist.pdf
ISA Certified Tree Worker Aerial Lift Specialist	International Society of Arboriculture	Requires candidates to demonstrate their ability to perform as a competent aerial lift operator; along with proven knowledge of CPR and first aid.	http://www.isa-arbor.com/certification/resources/cert_Application_AerialLift.pdf
ISA Board Certified Master Arborist	International Society of Arboriculture	This credential recognizes ISA Certified Arborists® who have reached the pinnacle of their profession.	http://www.isa-arbor.com/certification/resources/cert_Application_BCMA.pdf
TCIA Accreditation	Tree Care Industry Association (TCIA)	Any commercial tree care company in the United States and Canada can apply for accreditation.	http://www.tcia.org/TCIA/BUSINESS/Accreditation/Learn_More.aspx
TCIA Accredited Utility Contractor	Tree Care Industry Association (TCIA)	For commercial right-of-way (ROW) vegetation management/utility line clearance contractors.	http://www.tcia.org/TCIA/BUSINESS/Accreditation_/Utility_Contractor_Accreditation/TCIA/BUSINESS/Accreditation/Utility_Contractor_Accreditation.aspx?hkey=49b504ea-059b-4465-8707-10a9c822d576

Certified Treecare Safety Professional (CTSP)	Tree Care Industry Association (TCIA)	Must meet at least one of following requirements: 1) Three years' of technical field experience in tree care with at least one year of assumed responsibility for safety (i.e., crew leader, trainer, safety committee member, emergency responder, certified CPR/first aid provider, etc.) 2) Six months' technical field experience in arboriculture and one year in a professional safety position, 3) Two- or four-year degree in Arboriculture, Forestry, Ornamental/Environmental Horticulture, Natural Resources, Industrial Hygiene, Occupational Safety or other related field with an internship that provided technical field experience.	http://tcia.org/TCIA/SAFETY/CTSP/TCIA/SAFETY/About_CTSP/About_CTSP.aspx?hkey=884b251e-31e5-4cc2-907b-3c91c2bd8be1
Qualified Crew Leader Certificate	Tree Care Industry Association (TCIA)	Those currently working as crew leaders, individuals supervising crew leaders, and individuals working toward becoming crew leaders.	http://tcia.org/TCIA/SAFETY/Qualification_-_Crew_Leader/TCIA/SAFETY/Credentialing_Programs/Qualification_Crew_Leader.aspx?hkey=66888dea-e0fb-4ddb-9c47-cba2711d231f
Tree Care Academy	Tree Care Industry Association (TCIA)	Credentialing of tree care employees according to industry standards	http://tcia.org/TCIA/SAFETY/Tree_Care_Academy/TCIA/SAFETY/Credentialing_Programs/Tree_Care_Academy/Tree_Care_Academy.aspx?hkey=3d454b28-8beb-4e35-976d-b69659db4f14
ROW Stewardship Technical Requirements, Accreditation Standards for Assessing IVM Excellence (3/1/16)	Right-of-Way Stewardship Council/Dovetail Partners	Electric transmission, natural gas, and liquid petroleum pipeline industries seeking accreditation of integrated vegetation management (IVM) practices on rights of way.	http://www.rowstewardship.org/resource_pdfs/2016_rowsc_accreditation_standards.pdf

ANSI Z133.1 Safety Standards	The Z133 Safety Standard was developed for the arboriculture industry under the procedures of the American National Standards Institute.	Guide for federal, state, and municipal authorities in drafting regulations.	http://www.isa-arbor.com/store/product.aspx?ProductID=122
ANSI A300 Tree Care Performance Standards	Developed by TCIA and written by a committee called the Accredited Standards Committee (ASC) A300	Voluntary industry consensus performance standards based on current research and sound practice for writing specifications to manage trees, shrubs, and other woody plants.	http://www.tcia.org/TCIA/BUSINESS/ANSI_A300_Standards_/TCIA/BUSINESS/A300_Standards/A300_Standards.aspx?hkey=202ff566-4364-4686-b7c1-2a365af59669
ASCA Registered Consulting Arborist	Offered by the American Society of Consulting Arborists	Requires completion of ASCA's Consulting academy and continuing education.	http://www.asca-consultants.org/?page=RCA
SITES Accredited Professional	Administered by Green Business Certification Inc. (GBCI), SITES	SITES certification is for development projects located on sites with or without buildings—ranging from national parks to corporate campuses, streetscapes to homes, and more.Framework to define the profession of sustainable landscape design and development. It provides landscape professionals with the opportunity to demonstrate their knowledge, expertise and commitment to the profession.	http://www.sustainablesites.org/sites-ap
Urban Salvaged & Reclaimed Woods Inc. (USRW)		An urban lumber network that is developing standards and chain-of-custody tracking for urban and reclaimed woods and is working with an inventory management and CoC System AncesTREE™ to provide 3rd party certification to meet and exceed the requirements of PEFC, SFI, FSC, and LEED.	www.urbansalvagedwoods.com
TreeCycle America		Treecycle America is a collaborative network of certified mills, arborists, designers, architects, woodworkers, artisans, and municipalities embracing the common goal of using trees to their fullest potential.	http://treecycleamerica.com/

Analysis also includes these third-party certification programs that apply to natural and plantation forestry outside of developed areas:
Forest Stewardship Council (FSC): https://us.fsc.org/en-us/certification
Programme for the Endorsement of Forest Certification http://www.pefc.org
Sustainable Forestry Initiative (SFI): http://www.sfiprogram.org/
SCS Global Services, Salvaged Wood & Fiber Verification: https://www.scsglobalservices.com/salvaged-wood-verification

Appendix B. Green Building Definitions of Regional Materials

Box A. Regional Materials Requirements in USGBC LEED

LEED BD+C: New Construction | v3 - LEED 2009

Regional materials

MRc5 | Possible 2 points

Intent

To increase demand for building materials and products that are extracted and manufactured within the region, thereby supporting the use of indigenous resources and reducing the environmental impacts resulting from transportation.

Requirements

Use building materials or products that have been extracted, harvested or recovered, as well as manufactured, within a specified distance of the project site for a minimum of 10% or 20%, based on cost, of the total materials value. If only a fraction of a product or material is extracted, harvested, or recovered and manufactured locally, then only that percentage (by weight) must contribute to the regional value. The minimum percentage regional materials for each point threshold is as follows:

Regional Materials	Points
10%	1
20%	2

Option 1

All building materials or products have been extracted, harvested or recovered, as well as manufactured within a 500 mile (800 kilometer) radius of the project site.

OR

Option 2

Building materials or products shipped by rail or water have been extracted, harvested or recovered, as well as manufactured within a 500 mile (800 kilometer) total travel distance of the project site using a weighted average determined through the following formula:

(Distance by rail/3) + (Distance by inland waterway/2) + (Distance by sea/15) + (Distance by all other means) ≤ 500 miles [800 kilometers]

Box B. Regional Materials Requirements in NAHB NGBS

11.609
REGIONAL MATERIALS

11.609.1 Regional materials. Regional materials are used for major and/or minor components of the building. **(For a component to comply with this practice, a minimum of 75% of all products in that component category must be sourced regionally, e.g., stone veneer category – 75 percent or more of the stone veneer on a project must be sources regionally.)**	**10 Max** **2 per each major component and 1 per each minor component**

REGIONAL MATERIAL. Material that originates, is produced, grows naturally, or occurs naturally within: (1) 500 miles (804.7 km) of the construction site if transported by truck, or (2) 1,500 miles (2,414 km) of the construction site if transported for not less than 80 percent of the total transport distance by rail or water. Products that are assembled or produced from multiple raw materials are considered regional materials if the weighted average (by weight or volume) of the distance the raw materials have been transported meet the distance criteria.

Box C. Renewable Material Requirements in NAHB NGBS

11.606
RENEWABLE MATERIALS

11.606.0 Intent. Building materials derived from renewable resources are used.

11.606.1 Biobased products. The following biobased products are used:		**8 Max**
	(a) certified solid wood in accordance with Section 11.606.2	
	(b) engineered wood	
	(c) bamboo	
	(d) cotton	
	(e) cork	
	(f) straw	
	(g) natural fiber products made from crops (soy-based, corn-based)	
	(h) other biobased materials with a minimum of 50 percent biobased content (by weight or volume)	
(1)	Two types of biobased materials are used, each for more than 0.5 percent of the project's projected building material cost.	**3**
(2)	Two types of biobased materials are used, each for more than 1 percent of the project's projected building material cost.	**6**
(3)	For each additional biobased material used for more than 0.5 percent of the project's projected building material cost.	**1** **2 Max**

11.606.2 Wood-based products. Wood or wood-based products are certified to the requirements of one of the following recognized product programs:		
	(a) American Forest Foundation's *American Tree Farm System®* (ATFS)	
	(b) Canadian Standards Association's *Sustainable Forest Management System Standards* (CSA Z809)	
	(c) *Forest Stewardship Council* (FSC)	
	(d) *Program for Endorsement of Forest Certification Systems* (PEFC)	
	(e) *Sustainable Forestry Initiative® Program (SFI)*	
	(f) *National Wood Flooring Association's Responsible Procurement Program (RPP)*	
	(g) other product programs mutually recognized by PEFC	
(1)	A minimum of two certified wood-based products are used for minor components of the building.	**3**
(2)	A minimum of two certified wood-based products are used in major components of the building.	**4**

www.dovetailinc.org

528 Hennepin Ave., Suite 703 Minneapolis, MN 55403 USA

info@dovetailinc.org | **Phone:** +1 612-333-0430 | **Fax:** +1 612-333-0432

Dovetail Partners, Inc. - A Trusted Source of Environmental Information